

AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936

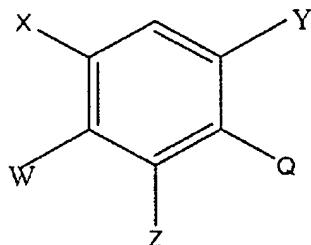
RECEIVED
CENTRAL FAX CENTER
JUL 07 2006

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (finally amended - four times): A compound represented by the formula I or its salts



I

wherein X is hydrogen, halogen, nitro, amino, NHR, N(R)₂, amide, [thioatnide]thioamide, cyano, alkylcarbonyl, alkoxy carbonyl, [alkylsulfonamnde] alkylsulfonamide, unsubstituted or substituted alkyl, haloalkyl, alkoxy, haloalkoxy, alkoxy carbonylalkoxy, benzyloxy, amyloxy, or heteroaryloxy;

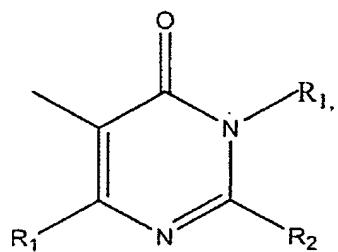
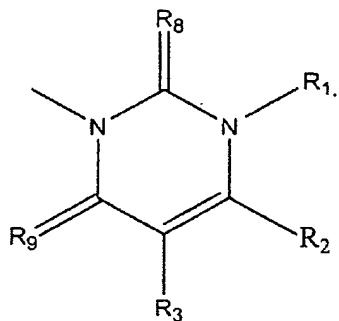
Y is hydrogen, halogen, or nitro;

W is hydrogen, OR, SR, NHR, N(R)₂, CH₂R, CH(R)₂, C(R)₃, halogen, nitro, or cyano, where multiple R groups represent any possible combination of substituents described by R; R is hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heteroaryl, alkoxy, cycloalkyloxy, aryloxy, heteroaryloxy, alkylsulfonyl, benzyl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy carbonyl, aryloxycarbonyl, or heteroaryloxycarbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups

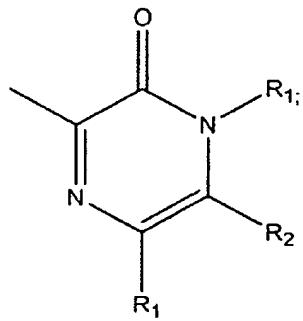
AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936

represented by one or more of the following: halogen, cyano, nitro, amino, carboxyl, alkyl, haloalkyl, alkylsilyl, alkylcarbonyl, haloalkylcarbonyl, alkoxy, [alkoxybarbonyl]alkoxycarbonyl, haloalkoxy, haloalkoxycarbonyl, alkylsulfonyl, haloalkylsulfonyl, aryl, heteroaryl, or cycloalkyl;

Q is a heterocycle:



or



AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936

wherein R₁ is hydrogen, alkyl, haloalkyl, alkenyl, alkynyl, amino, alkoxyalkyl, acetyl, alkoxycarbonylamino, alkylcarbonylamino, or alkoxycarbonyl;

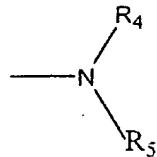
R₂ is alkyl or haloalkyl;

R₁ and R₂ could combine to form a five- or six-membered heterocyclic ring;

R₃ is hydrogen, halogen, nitro, amino, alkylamino, haloalkylamino, cyano, or amide;

R₈ and R₉ are independently oxygen, or sulfur;

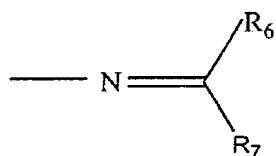
Z is amino, hydroxyl, thiol, formyl, carboxyl, cyano, alkylcarbonyl, arylcarbonyl, azido, or one of the following:



wherein R₄ is alkyl, alkenyl, alkynyl, amino, cycloalkyl, heterocycloalkyl, alkylsulfonyl, arylsulfonyl, benzyl, aryl, heteroaryl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, cycloalkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy carbonyl, alkylthiocarbonyl, cycloalkyloxycarbonyl, aryloxycarbonyl, [arylthio-carbonyl], aryl-thiocarbonyl, heteroaryloxycarbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, heteroarylaminocarbonyl, alkoxy carbonylcarbonyl or arylcarbonylcarbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyan, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl, alkenyl, alkynyl, [alkylcarbonyl] alkylcarbonyl, alkylcarbonyloxy, alkoxy, alkoxy carbonyl,

AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936

alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl alkylaminocarbonyl, arylaminocarbonyl, alkylsulfonyl, alkenyloxycarbonyl, alkynyloxycarbonyl, aryl, arylcarbonyl, aryloxy, aryloxycarbonyl, arylthio, heteroaryl, heteroaryloxycarbonyl or methylenedioxy, wherein the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy, alkoxy carbonyl, aryl, or heterocycloalkyl; and R₅ is hydrogen or any one of the groups represented by R₄; or R₄ and R₅ could combine to form a 4-8 membered heterocyclic ring;



wherein R₆ represents alkyl, haloalkyl, dialkylamino, unsubstituted or substituted aryl and heteroaryl; and R₇ represents hydrogen or any of the groups represented by R₆;

-OR₄,

-SR₄,

-CH₂R₁₀,

-CH(R₁₀)₂,

-C(R₁₀)₃, or

-CH=CHR₁₀

wherein R₁₀ is carboxyl, alkyl, alkenyl, alkynyl, amino, cycloalkyl, heterocycloalkyl, alkylsulfonyl, arylsulfonyl, benzyl, aryl, heteroaryl, alkylcarbonyl, alkenylcarbonyl,

AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936

alkynylcarbonyl, cycloalkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxycarbonyl, [alkyithiocarbonyl] alkylthiocarbonyl, cycloalkyloxycarbonyl, aryloxycarbonyl, [arylthiocarbonyl,] aryl-thiocarbonyl, heteroaryloxycarbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, heteroarylaminocarbonyl, alkoxy carbonylcarbonyl or arylcarbonylcarbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl, alkenyl, alkynyl, cycloalkyl, alkylcarbonyl, alkylcarbonyloxy, alkoxy, alkoxy carbonyl, alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl alkylaminocarbonyl, arylaminocarbonyl, alkylsulfonyl, alkenyloxycarbonyl, alkynyloxycarbonyl, aryl, arylcarbonyl, aryloxy, aryloxycarbonyl, arylthio, heteroaryl, heteroaryloxycarbonyl or methylenedioxy, wherein the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy, alkoxy carbonyl, cycloalkyl, aryl, or heterocycloalkyl;

provided that [(1)] Z is not alkyl, alkoxy, haloalkyl, haloalkoxy, alkylthio, haloalkythio, alkenyl, haloalkenyl, amino, monoalkylamino, dialkylamino, alkoxyalkoxy, hydroxyl, alkynyloxy or cyano, when Q is Q1 and R₂ is haloalkyl.

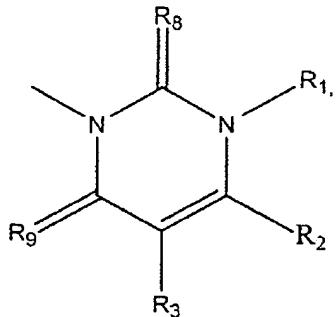
5. (finally amended - three times): The compound according to claim 1 wherein X is a halogen;

Y is fluorine;

W is OR; R is alkyl, alkenyl, or alkynyl, where any of these groups may be unsubstituted or substituted with halogen or cyano;

Q is

AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936



Q1

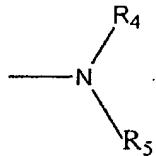
wherein R₁ is alkyl, amino, or haloalkyl;

R₂ is haloalkyl;

R₃ is hydrogen;

R₈ and R₉ are independently oxygen, or sulfur;

Z is represented by the following:



wherein R₄ is alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, cycloalkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy carbonyl, alkylthiocarbonyl, cycloalkyloxycarbonyl, aryloxycarbonyl, [arylthio-carbonyl] aryl-thiocarbonyl, heteroaryloxycarbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, heteroarylaminocarbonyl, alkoxy carbonyl carbonyl, or arylcarbonylcarbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl, alkenyl, alkynyl, alkylcarbonyl, alkylcarbonyloxy, alkoxy, alkoxy carbonyl, alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl alkylaminocarbonyl,

AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936

arylaminocarbonyl, alkylsulfonyl, alkenyloxycarbonyl, alkynyoxy carbonyl, aryl, arylcarbonyl, aryloxy, aryloxycarbonyl, arylthio, heteroaryl, heteroaryloxycarbonyl, or methylenedioxy, wherein the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy, alkoxy carbonyl, aryl, or [heterocyclcoalkyl]heterocycloalkyl; and R₅ is hydrogen;

or -CH₂R₁₀,

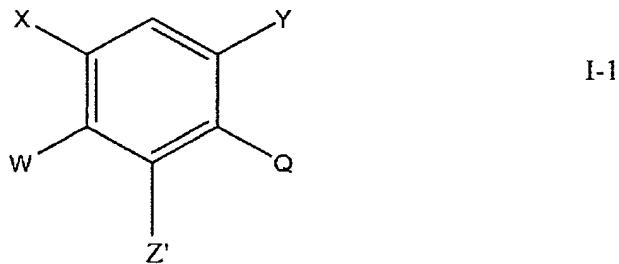
wherein R₁₀ is carboxyl, alkyl, alkenyl, or alkynyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl, alkenyl, alkynyl, cycloalkyl, alkylcarbonyl, alkylcarbonyloxy, alkoxy, alkoxy carbonyl, alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl alkylaminocarbonyl, arylaminocarbonyl, alkylsulfonyl, alkenyloxycarbonyl, alkynyoxy carbonyl, aryl, arylcarbonyl, aryloxy, aryloxycarbonyl, arylthio, heteroaryl, heteroaryloxycarbonyl, or methylenedioxy, wherein [teh]the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy, alkoxy carbonyl, cycloalkyl, aryl, or heterocycloalkyl.

6. (finally amended - four times): A compound selected from the group consisting of 3-(2-amino-4-chloro-6-fluoro-3-methoxyphenyl)-1-methyl-6-trifluoromethyl-2,4(1H,3H)pyrimidinedione; [and 3-(²-amino-4-chloro-6-fluoro-3-methoxyphenyl)-1-amino-6-trifluoromethyl-2,4(1H,3H)-pyrimidinedione]3-(2-amino-4-chloro-6-fluoro-3-methoxyphenyl)-1-amino-6-trifluoromethyl-2,4(1H,3H)-pyrimidinedione;

AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936

3-(2-amino-4-chloro-6-fluoro-3-methylphenyl)-1-methyl-6-trifluoromethyl-2,4(1H,3H)-pyrimidinedione; and 3-(2-amino-4-chloro-3-difluoromethoxy-6-fluorophenyl)-1-methyl-6-trifluoromethyl-2,4(1H,3H)-pyrimidinedione.

8. (finally amended - two times): A process for preparing a compound represented by the formula I-1 or its salts:



wherein X is hydrogen, halogen, nitro, amino, NHR, N(R)₂, [ainide]amide, thioamide, cyano, alkylcarbonyl, alkoxy carbonyl, alkylsulfonamide, unsubstituted or substituted alkyl, haloalkyl, alkoxy, haloalkoxy, alkoxy carbonyl alkoxy, [benzloxy]benzyloxy, aryloxy, or heteroaryloxy;

Y is hydrogen, halogen, or nitro;

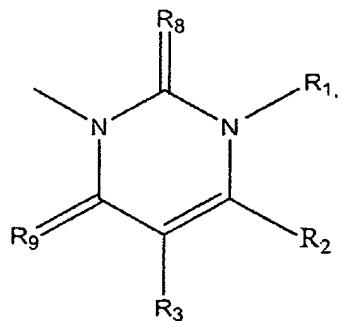
W is hydrogen, OR, SR, NHR, N(R)₂, CH₂R, CH(R)₂, C(R)₃, halogen, nitro, or cyano, where multiple R groups represent any possible combination of substituents described by R; R is hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heteroaryl, alkoxy, cycloalkyloxy, aryloxy, heteroaryloxy, alkylsulfonyl, benzyl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy carbonyl, aryloxy carbonyl, or heteroaryloxycarbonyl,

AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936

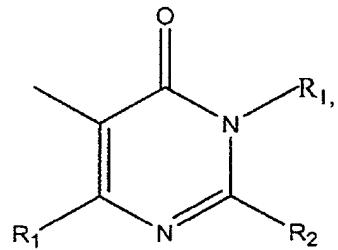
where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, carboxyl, alkyl, haloalkyl, alkylsilyl, alkylcarbonyl, haloalkylcarbonyl, alkoxy, alkoxy carbonyl, haloalkoxy, haloalkoxycarbonyl, alkylsulfonyl, haloalkylsulfonyl, aryl, heteroaryl, or cycloalkyl;

Q is a heterocycle:

AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936

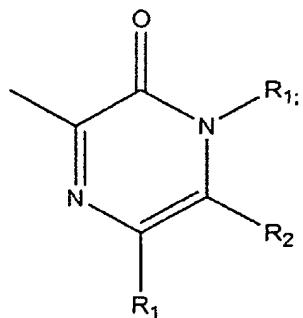


Q1



Q12

OR



Q13

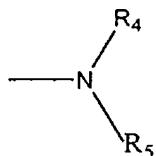
wherein R₁ is hydrogen, alkyl, haloalkyl, alkenyl, alkynyl, amino, alkoxyalkyl, acetyl, alkoxycarbonylamino, alkylcarbonylamino, or alkoxycarbonyl;
R₂ is alkyl or haloalkyl;
R₁ and R₂ could combine to form a five- or six-membered heterocyclic ring;

AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936

R₃ is hydrogen, halogen, nitro, amino, alkylamino, haloalkylamino, cyano, or amide;

R₈ and R₉ are independently oxygen, or sulfur;

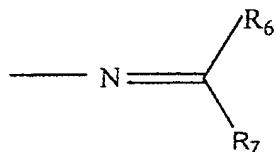
Z' is one of the following:



wherein R₄ is alkyl, alkenyl, alkynyl, amino, cycloalkyl, heterocycloalkyl, alkylsulfonyl, arylsulfonyl, benzyl, aryl, heteroaryl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, cycloalkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy carbonyl, alkylthiocarbonyl, cycloalkyloxycarbonyl, aryloxycarbonyl, [arylthio-carbonyl,] aryl-thiocarbonyl, heteroaryloxycarbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, heteroarylaminocarbonyl, alkoxy carbonylcarbonyl, or arylcarbonylcarbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl, alkenyl, alkynyl, alkylcarbonyl, alkylcarbonyloxy, alkoxy, alkoxy carbonyl, alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl alkylaminocarbonyl, arylaminocarbonyl, alkylsulfonyl, alkenyloxycarbonyl, alkynyloxycarbonyl, aryl, arylcarbonyl, aryloxy, aryloxycarbonyl, arylthio, heteroaryl, heteroaryloxycarbonyl, or methylenedioxy, wherein the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy,

AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936

alkoxycarbonyl, aryl, or heterocycloalkyl; and R₅ is hydrogen or any one of the groups represented by R₄; or R₄ and R₅ could combine to form a 4-8 membered heterocyclic ring;



wherein R₆ represents alkyl, [haloalkyl]haloalkyl, dialkylamino, unsubstituted or substituted aryl and heteroaryl; and R₇ represents hydrogen, halogen or any of the groups represented by R₆;

-CH₂R₁₀,

-CH(R₁₀)₂,

-C(R₁₀)₃, or

-CH=CHR₁₀

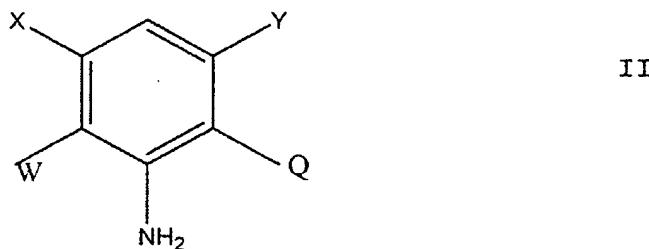
wherein R₁₀ is carboxyl, alkyl, alkenyl, alkynyl, amino, cycloalkyl, heterocycloalkyl, [25] alkylsulfonyl, arylsulfonyl, benzyl, aryl, heteroaryl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, cycloalkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxycarbonyl, alkylthiocarbonyl, cycloalkyloxycarbonyl, aryloxycarbonyl, [arylthio-carbonyl] aryl-thiocarbonyl, heteroaryloxycarbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, heteroarylaminocarbonyl, alkoxycarbonylcarbonyl or arylcarbonylcarbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl,

AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936

alkenyl, alkynyl, cycloalkyl, alkylcarbonyl, alkylcarbonyloxy, alkoxy, alcoxycarbonyl, alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl alkylaminocarbonyl, arylaminocarbonyl, alkylsulfonyl, alkenyloxycarbonyl, alkynyloxycarbonyl, aryl, arylcarbonyl, aryloxy, aryloxycarbonyl, arylthio, heteroaryl, heteroaryloxycarbonyl or methylenedioxy, wherein the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy, alcoxycarbonyl, cycloalkyl, aryl, or heterocycloalkyl;

provided that [(1)] Z' is not alkyl, haloalkyl, alkenyl, haloalkenyl, monoalkylamino, or dialkylamino, when Q is Q1 and R₂ is haloalkyl,

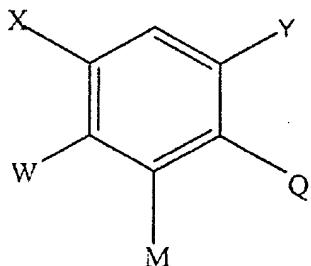
which comprises of reacting a compound represented by the formula II:



with a compound selected from the group consisting of an alkyl halide, alkyl acid halide, aryl acid halide, alkyl acid anhydride, aryl acid anhydride, alkylhaloformate, alkyl isocyanate, aryl isocyanate, alkyl dihalide, aliphatic aldehyde, aliphatic ketone, aromatic aldehyde, and aromatic ketone.

9. (finally amended - once amended): A compound represented by the formula III:

AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936



III

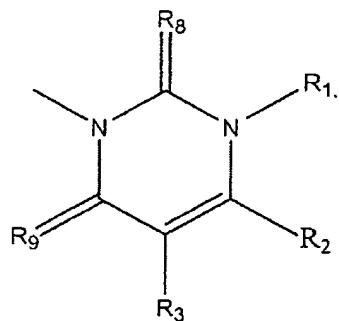
wherein X is hydrogen, halogen, nitro, amino, NHR, N(R)₂, amide, thioamide, cyano, alkylcarbonyl, alkoxy carbonyl, alkylsulfonamide, unsubstituted or substituted alkyl, haloalkyl, alkoxy, haloalkoxy, alkoxy carbonyl alkoxy, benzyloxy, aryloxy, or heteroaryloxy;

Y is hydrogen, halogen, or nitro;

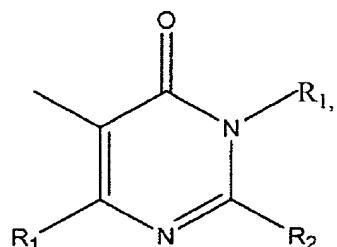
W is hydrogen, OR, SR, NHR, N(R)₂, CH₂R, CH(R)₂, C(R)₃, halogen, nitro, or cyano, where multiple R groups represent any possible combination of substituents described by R; R is hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heteroaryl, alkoxy, cycloalkyloxy, aryloxy, heteroaryloxy, alkylsulfonyl, benzyl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy carbonyl, aryloxy carbonyl, or heteroaryloxycarbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, carboxyl, alkyl, haloalkyl, alkylsilyl, alkylcarbonyl, haloalkylcarbonyl, alkoxy, alkoxy carbonyl, haloalkoxy, haloalkoxycarbonyl, alkylsulfonyl, haloalkylsulfonyl, aryl, heteroaryl, or cycloalkyl;

Q is a heterocycle:

AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936

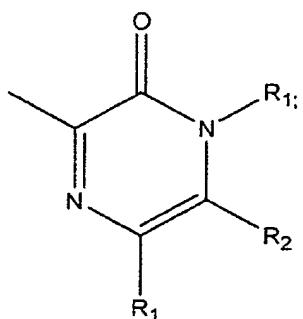


Q1



Q12

or



Q13

wherein R₁ is hydrogen, alkyl, haloalkyl, alkenyl, alkynyl, amino, alkoxyalkyl, acetyl, alkoxycarbonylamino, alkylcarbonylamino, or alkoxycarbonyl;
 R₂ is alkyl or haloalkyl;
 R₁ and R₂ could combine to form a five- or six-membered heterocyclic ring;

AMENDMENT UNDER 37 C.F.R. §1.312
U.S. Application No. 10/797,936

R₃ is hydrogen, halogen, nitro, amino, alkylamino, haloalkylamino, cyano, or amide;

R₈ and R₉ are independently oxygen or sulfur;

M is nitro,

provided that 1-methyl-6-trifluoromethyl-3-(4-bromo-2-fluoro-5-hydroxy-6-nitrophenyl)-2,4(1H,3H)-pyrimidinedione and 1-methyl-6-trifluoromethyl-3-(4-chloro-2-fluoro-5-hydroxy-6-nitrophenyl)-2,4,(1H,3H)-pyrimidinedione are excluded.